



STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF MANAGEMENT AND BUDGET
STATE PLANNING COORDINATION

April 2, 2008

Mr. Kevin Smith
Kercher Engineering, Inc.
413 East Market Street
Georgetown, DE 19947

RE: PLUS review – 2008-02-06; Deerfield Meadows

Dear Mr. Smith:

Thank you for meeting with State agency planners on March 5, 2008 to discuss the proposed Deerfield Meadows project located on the south side of DE Route 20, east of SCR 483.

According to the information received, you are seeking to a rezoning from AG-1/GR to AR-1 for a 40 unit residential subdivision.

Please note that additional plan changes, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. The development will also need to comply with any Federal, State and local regulations regarding this property. We also note that as Sussex County is the governing authority over this land, you will need to comply with any and all regulations/restrictions set forth by the County.

This proposal is located in Investment Level 4 according to the *Strategies for State Policies and Spending*, and is within the Low Density area according to the Sussex County certified comprehensive plan. **The comments in this letter are technical, and are not intended to suggest that the State supports this development proposal. This letter does not in any way suggest or imply that you may receive or may be entitled**

to permits or other approvals necessary to construct the development you indicate or any subdivision thereof on these lands.

The following are a complete list of comments received by State agencies:

Office of State Planning Coordination – Contact: Bryan Hall 739-3090

This project represents a major land development that will result in 40 residential units in an Investment Level 4 area according to the *2004 Strategies for State Policies and Spending*. This proposal is located in Investment Level 4 according to the *Strategies for State Policies and Spending*, and is within the Low Density area according to the Sussex County certified comprehensive plan. Investment Level 4 indicates where State investments will support agricultural preservation, natural resource protection, and the continuation of the rural nature of these areas. New development activities and suburban development are not supported in Investment Level 4 areas. These areas are comprised of prime agricultural lands and environmentally sensitive wetlands and wildlife habitats, which should be, and in many cases have been preserved.

From a fiscal responsibility perspective, development of this site is likewise inappropriate. The cost of providing services to development in rural areas is an inefficient and wasteful use of the State's fiscal resources. The project as proposed is likely to bring more than 100 new residents to an area where the State has no plans to invest in infrastructure upgrades or additional services. These residents will need access to such services and infrastructure as schools, police, and transportation. To provide some examples, the State government funds 100% of road maintenance and drainage improvements for the transportation system, 100% of school transportation and paratransit services, up to 80% of school construction costs, and about 90% of the cost of police protection in the unincorporated portion of Sussex County where this development is proposed. Over the longer term, the unseen negative ramifications of this development will become even more evident as the community matures and the cost of maintaining infrastructure and providing services increases.

While the State has no objections to the rezoning of the property, we are opposed to that development of 40 units on individual septic systems in Level 4. The development of this parcel is inconsistent with the *Strategies for State Policies and Spending*.

Division of Historical and Cultural Affairs – Contact: Terence Burns 736-7400

The State Historic Preservation Office of the Delaware Division of Historic & Cultural Affairs, would like to advise the developer of the following historical observations and

information in reference to this project area. Here are the following historical observations:

- There did not appear to be any known historic or cultural resource sites such as a known archaeological site or national register listed property on this project area, but there are a few known historic and cultural resource sites nearby, they seem to be close to the project area. One of the historic and cultural resource sites is it **a late 19th-century to early 20th-century dwelling/house (S-6015)**, located on/off Road 20 east. **The other historic and cultural resource sites are known archaeological sites, one is located on the north side of Cool Branch-some 1000 ft southwest of Route 20 (S-7801, 7S-E-109), another one is located 2500 ft south of Route 20 and 2500 ft east of Road 485 bridge over Tubbs Branch (S-7799, 7S-E-107).**
- Another historical aspect that the developer should be aware of is the historical background of the location of the project area. According to the **Beers Atlas of 1868**, this project area is within the vicinity of Broad Creek Hundred, and there is a variety of historical attributes within the vicinity of Broad Creek Hundred. **The Beers Atlas of 1868** also indicates that there were a few structures of some type very close to where the project area is located today. That structure was associated to **C. Spicer**, and there is a possibility that there could probably be potential historic and cultural resources or archaeological resources affiliated with or related to that structure.
- Since this project area is located where there is a known historic or cultural resource site nearby, there is possibility that there could probably be a potential historic or cultural resource of some type within this project area. This historic or cultural resource could also be some type of archaeological resource such as cemetery, burial ground, unmarked human remains, or some other type of hidden contents or remains that has significant historical attributes or aspects. It is very important that the developer become familiar with the laws and regulations of the state of Delaware that pertains to the discovery and disposition of archaeological resources and unmarked human burials or skeletal remains.
- The State Historic Preservation Office of the Delaware Division of Historic & Cultural Affairs strongly recommends that the developer should read **Chapters 53 and 54, in Title 7, of the Delaware State Code** prior to or before any ground-disturbing activities, demolition, or construction starts or begins on this project area. **Chapter 53** pertains to the “Conservation of Archaeological Resources In or On State Lands”, and **Chapter 54 pertains to the Delaware Unmarked Human Remains Act of 1987**. The unexpected discovery archaeological

resources or unmarked human remains during construction can result in significant delays.

- The State Historic Preservation Office of the Delaware Division of Historic & Cultural Affairs also recommends strongly that the developer should consider hiring an archaeological consultant to check and examine the project area thoroughly prior to or before any ground-disturbing activities, demolition, or construction starts or begins on this project area. The purpose for this is to make sure that there is no indication or evidence of a potential historic or cultural resource or archaeological resource of some type such as a cemetery, burial ground, unmarked human remains, or some other type of hidden contents or remains, which has historical attributes or aspects.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

DelDOT is not opposed to the proposed rezoning, but we have significant concerns about the proposed development.

Because this development is proposed for a Level 4 Area, it is inconsistent with the *Strategies for State Policies and Spending*. As part of our commitment to support the *Strategies*, DelDOT refrains from participating in the cost of any road improvements needed to support this development and is opposed to any road improvements that will substantially increase the transportation system capacity in this area. DelDOT will only support taking the steps necessary to preserve the existing transportation infrastructure and make whatever safety and drainage related improvements are deemed appropriate and necessary. The intent is to preserve the open space, agricultural lands, natural habitats and forestlands that are typically found in Level 4 Areas while avoiding the creation of isolated development areas that cannot be served effectively or efficiently by public transportation, emergency responders, and other public services.

DelDOT strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in approved Comprehensive Plans. We encourage the use of transfer of development rights where this growth management tool is available.

If this development proposal is approved, notwithstanding inconsistencies with the relevant plans and policies, DelDOT will provide further technical review and comments.

**The Department of Natural Resources and Environmental Control – Contact:
Kevin Coyle 739-9071**

Investment Level 4 Policy Statement

This project is proposed for an Investment Level 4 area as defined by the *Strategies for State Policies and Spending* and is also located outside of a designated growth area in the relevant municipal and County certified comprehensive plans. According to the *Strategies*, this project is inappropriate in this location. In Investment Level 4 areas, the State's investments and policies, from DNREC's perspective, should retain the rural landscape and preserve open spaces and farmlands. Open space investments should emphasize the protection of critical natural habitat and wildlife to support a diversity of species, and the protection of present and future water supplies. Open space investments should also provide for recreational activities, while helping to define growth areas. Additional State investments in water and wastewater systems should be limited to existing or imminent public health, safety or environmental risks only, with little provision for additional capacity to accommodate further development.

With continued development in Investment Level 4 areas, the State will have a difficult, if not impossible, time attaining water quality (e.g., TMDLs) and air quality (e.g., non-attainment areas for ozone and fine particulates) goals. Present and future investments in green infrastructure, as defined in Governor Minner's Executive Order No. 61, will be threatened. DNREC strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in certified Comprehensive Plans. DNREC encourages the use of transfer of development rights where this growth management tool is available.

This particular development certainly compromises the integrity of the State Strategies and the preservation goals inherent in many of DNREC's programs. Of particular concern are the project's location in an excellent recharge area, 40 individual wells and on-site septic systems, and tax ditch rights-of-way. While mitigating measures such as conservation design, central wastewater systems instead of individual on-site septic systems, and other best management practices may help mitigate impacts from this project, not doing the project at all is the best avenue for avoiding negative impacts. As such, this project will receive no financial, technical or other support of any kind from DNREC. Any required permits or other authorizations for this project shall be considered in light of the project's conflict with our State growth strategies.

Soils

According to the Sussex County soil survey update, Fort Mott, Rosedale, Klej, Hurlock, and Longmarsh were mapped on subject parcel. Fort Mott and Rosedale are well-drained upland soils that, generally, have few limitations for development. Klej is a somewhat poorly-drained transitional soil likely to have both upland and wetland soil components. Hurlock and Longmarsh are poorly to very poorly-drained wetland associated (hydric) soil that has severe limitations for development.

Wetlands

Based on Statewide Wetlands Mapping Project (SWMP) mapping, palustrine riparian headwater wetlands bound much of the southern boundary of subject parcel.

The applicant is responsible for determining whether any State-regulated wetlands (regulated pursuant to 7 Del.C., Chapter 66 and the Wetlands Regulations) are present on the property. This determination can only be made by contacting the Division of Water Resources' Wetlands and Subaqueous Lands Section at 302/739-9943 and consulting the State's official wetland regulatory maps, which depict the extent of State jurisdiction. The area regulated by State law may be very different from the area under federal authority. No activity may take place in State-regulated wetlands without a permit from DNREC's Wetlands Section.

In addition, most perennial streams and ditches and many intermittent streams and ditches are regulated pursuant to the Subaqueous Lands Act (7 Del.C. Chapter 72) and the Regulations Governing the Use of Subaqueous Lands. Ponds which are connected to other waters are also regulated, while isolated ponds are not. Any work in regulated streams, ditches or ponds requires a permit from the Wetlands and Subaqueous Lands Section. An on-site jurisdictional determination is recommended in order to determine whether any regulated watercourses exist on the property. Contact the Wetlands and Subaqueous Lands Section at 302/739-9943 to schedule an on-site visit. Such appointments can usually be scheduled within 2 to 3 weeks.

The applicant should also be reminded that they must avoid construction/filling activities in those areas containing wetlands or wetland associated hydric soils as they are subject to regulatory jurisdiction under Federal 404 provisions of the Clean Water Act. A site-specific field wetlands delineation using the methodology described in the 1987 United States Army Corps of Engineers (USACE, or "the Corps") manual is only acceptable basis for making a jurisdictional wetland determination for nontidal wetlands in Delaware. The applicant is forewarned that the Corps views the use of the National Wetlands Inventory (NWI) mapping or the Statewide Wetlands Mapping Project

(SWMP) mapping as an unacceptable substitute for making such delineations. To ensure compliance with said Corps regulatory requirements, it is strongly recommended that a field wetlands delineation using the above-referenced methodology be performed on this parcel before commencing any construction activities. It is further recommended that the Corps be given the opportunity to officially approve the completed delineation. In circumstances where the applicant or applicant's consultant delineates what they believe are nonjurisdictional isolated (SWANCC) wetlands, the Corps must be contacted to evaluate and assess the jurisdictional validity of such a delineation. The final jurisdictional authority for making isolated wetlands determinations rests with the Corps. They can be reached by phone at 736-9763.

Impacts to Palustrine wetlands are regulated by the Corps through Section 404 of the Clean Water Act. In addition, individual 404 permits and certain Nationwide Permits from the Corps also require 401 Water Quality Certification from the DNREC Wetland and Subaqueous Land Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Management Program (DCMP) Section. Each of these certifications represents a separate permitting process. Please be advised that Nationwide permits have been suspended in Delaware and are pending further coordination with the Corps. Therefore, contrary to past practices, Coastal Zone Management approval can no longer be assumed. Individual certifications must be granted from the DCMP office for each project intending to utilize a Nationwide Permit. For more information on the Federal Consistency process, please contact the DCMP office at 302.739.9283. To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-9943 to schedule a meeting.

Based on a review of existing buffer research by Castelle et al. (Castelle, A. J., A. W. Johnson and C. Conolly. 1994. *Wetland and Stream Buffer Requirements – A Review*. J. Environ. Qual. 23: 878-882), an adequately-sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100 feet in width. In recognition of this research and the need to protect water quality, the Watershed Assessment Section recommends that the applicant maintain/establish a minimum 100-foot upland buffer (planted in native vegetation) from all water bodies (including ditches) and wetlands.

Impervious Cover

Based on a review of the PLUS application form, post-construction surface imperviousness was projected to reach 16 percent. However, it was unclear from the submitted site plan whether all the forms of post-construction surface imperviousness

(i.e., rooftops, sidewalks, roads, and stormwater management structures) were comprehensively assessed or included in the calculated estimate for surface imperviousness. Excluding any form of constructed surface imperviousness will understate this project's actual environmental impacts. This calculation should be reviewed and recalculated if necessary.

Studies have shown a strong relationship between increases in impervious cover to decreases in a watershed's overall water quality. It is strongly recommended that the applicant implement best management practices (BMPs) that reduce or mitigate some of its most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with an increase in forest cover preservation or additional tree plantings are some examples of practical BMPs that could easily be implemented to help reduce surface imperviousness.

ERES Waters

This project is located adjacent to receiving waters of the Deep Creek watershed, and designated as having waters of Exceptional Recreational or Ecological Significance (ERES). ERES waters are recognized as special assets of the State, and shall be protected and/ or restored, to the maximum extent practicable, to their natural condition. Provisions in Section 5.6 of Delaware's "Surface Water Quality Standards" (as amended July 11, 2004), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of pollutants through implementation of Best Management Practices (BMPs). Moreover, provisions defined in subsection 5.6.3.5 of same section, specially authorize the Department to mandate BMPs to meet standards for controlling the addition of pollutants and reducing them to the greatest degree achievable and, where practicable, implementation of a standard requiring no discharge of pollutants.

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Deep Creek watershed. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited water body" can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. Although TMDLs are required by federal law, states are charged with developing and implementing standards to support these desired use goals. In the greater Nanticoke watershed, "target-rate-nutrient reductions" of 30 and 50 percent will be required for

nitrogen and phosphorus, respectively. Additionally, “target-rate-reductions” of 2 percent will be required for bacteria.

TMDL Compliance through the PCS

As indicated above, TMDLs for nitrogen and phosphorus have been proposed for the Deep Creek watershed. The TMDL calls for a 30 and 50 percent reduction in nitrogen and phosphorus from baseline conditions. The TMDL also calls for a 2 percent reduction in bacteria. A Pollution Control Strategy (PCS) will be used as a regulatory framework to ensure that these nutrient reduction targets are attained. The Department has developed an assessment tool to evaluate how your proposed development may reduce nutrients to meet the TMDL requirements. Additional nutrient reductions may be possible through the implementation of BMPs such as wider vegetated buffers along watercourses/wetlands, increasing the amount of passive, wooded open space, use of pervious paving materials to reduce surface imperviousness, deployment of green-technology stormwater management treatment technologies, and use of performance-based wastewater technology (or better yet, connection to central sewer if available). Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

Water Supply

The project information sheets state that individual on-site wells will be used to provide water for the proposed project. Our records indicate that the project is not located in an area where public water service is available. The Division of Water Resources will consider applications for the construction of on-site wells provided the wells can be constructed and located in compliance with all requirements of the Regulations Governing the Construction and Use of Wells. A well construction permit must be obtained prior to constructing any wells.

Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

Should you have any questions concerning these comments, please contact Rick Rios at 302-739-9944.

Water Resource Protection Areas

The Water Supply Section, Ground-Water Protection Branch (GPB) has determined that the project falls entirely within an excellent ground-water recharge potential area (see following map and attached map). The site plan indicates that one-half of the parcel will be developed.

Excellent Ground-Water Recharge Areas are those areas mapped by the Delaware Geological Survey where the first 20 feet of subsurface soils and geologic materials are exceptionally sandy. These soils are able to transmit water very quickly from the land surface to the water table. This map category (excellent) is an indicator of how fast contaminants will move and how much water may become contaminated (Andres, 2004). Land use activities or impervious cover on areas of excellent ground-water recharge potential may adversely affect ground water in these areas.

The DNREC GPB recommends that the portion of the new development within the excellent ground-water recharge area not exceed 20% impervious cover (DNREC, 2005). The purpose of an impervious cover threshold is to minimize loss of recharge (and associated increases in storm water) and protect the quality and quantity of ground water and surface water supplies.

An allowance for augmenting ground-water recharge should be considered if the impervious cover exceeds 20% but is less than 50% of that portion of the parcel within this area provided the applicant submit an environmental assessment including a climatic water budget and facilities to augment recharge. The environmental assessment must document that post-development recharge will be no less than predevelopment recharge when computed on an annual basis (Kauffman, 2005).

The proposed development would change the impervious over from 0% to approximately 16 %. Developer on the PLUS application provided these numbers. This figure appears to be an underestimation of impervious cover within the excellent ground-water recharge area.

Ground Water Protection Branch recommends:

- Limiting impervious cover to less than 20%
- Allow for more open space

GPB would like to know what is to become of the rest of the parcel. If it were to be developed, the use of an alternative to individual septic systems would need to be considered.

In addition, because the excellent ground water recharge area can readily affect the underlying aquifer if contaminants are spilled or discharged across the area, the storage of hazardous substances or wastes should not be allowed within the area unless specific approval is obtained from the relevant State, federal, or local program.

References

Andres, A. Scott, 2004, Ground-Water Recharge Potential Mapping in Kent and Sussex Counties, Delaware: Delaware Geological Survey Report of Investigations No. 66, p. 14.

<http://www.udel.edu/dgs/Publications/pubform.html#investigations>

Delaware Department of Natural Resources and Environmental Control (2005): *Source Water Protection Guidance Manual for the Local Governments of Delaware*: Dover, DE, 144 p.

http://www.wr.udel.edu/publications/SWAPP/swapp_manual_final/swapp_guidance_manual_final.pdf

Kauffman, G.J., Wozniak, S.L., and Vonck, K.J., 2005, *Delaware Ground-Water Recharge Design Manual*: Newark, DE, Water Resources Agency, University of Delaware, p. 31.

<http://www.wr.udel.edu/swaphome/Publications/SWPguidancemanual.html>

Map of Deerfield Meadows (PLUS 2008-02-06) The excellent ground-water recharge potential area is shaded in green. The site plan submitted by the Developer is overlain on the parcel.



Sediment and Erosion Control/Stormwater Management

A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. Contact the reviewing agency to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan as soon as practicable. The site topography, soils mapping, pre- and post-development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion. The plan review and approval as well as construction inspection will be coordinated through the Sussex Conservation District. Contact Jessica Watson at the Sussex Conservation District at (302) 856-2105 for details regarding submittal requirements and fees.

Because of the parcel's location in an impaired watershed and the amount of impervious surface, green technology BMPs and low impact development practices should be considered a priority to reduce stormwater flow and to meet water quality goals.

The Sediment and Stormwater Management Program ensures sediment and erosion control plans and stormwater plans comply with local land use ordinances and policies, including the siting of stormwater management facilities. However, we do not support

placement in resource protection areas or the removal of trees for the sole purpose of placement of a stormwater management facility/practice.

Drainage

- This project is located within the Cool Branch Tax Ditch, which has established tax ditch rights-of-way. The Drainage Program conducted a review of the Tax Ditch rights-of-way for this project and the results were submitted to Stephanie Perciful of Haller & Hudson. A copy of the review findings is included at the end of these comments. The placement of permanent obstructions within tax ditch rights-of-way is prohibited. The submitted preliminary record plan indicates the stormwater management area and lots 28-30 are within the current tax ditch right-of-way. There is also a proposed 30-foot forested buffer within the existing tax ditch right-of-way. Any change to the location of the tax ditch, or the existing tax ditch rights-of-way, will require a change to the Cool Branch Tax Ditch court order. Please contact Brooks Cahall of the Drainage Program to resolve the issues with the tax ditch. It is suggested to include Brooks Cahall in the pre-application meeting with the Sussex Conservation District to discuss drainage, stormwater management, tax ditch maintenance, and the release of stormwater into the tax ditch.
- The Drainage Program requests that the engineer take precautions to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water. The Drainage Program requests that the engineer check existing downstream ditches and pipes for function and blockages prior to the construction. Notify downstream landowners of the change in volume of water released on them.
- The Drainage Program encourages the elevation of rear yards to direct water towards the streets and alleyways where storm drains and swales are accessible for maintenance. However, the Drainage Program recognizes the need for catch basins in yards in certain cases. Therefore, catch basins and swales placed in rear and side yards will need to be clear of obstructions and be accessible for maintenance. Decks, sheds, fences, pools, and kennels can hinder drainage patterns as well as future maintenance to the storm drain, catch basin, or swale. Deed restrictions, along with drainage easements recorded on deeds, should ensure adequate future maintenance access.
- Have all drainage easements recorded on deeds and place restrictions on obstructions within the easements to ensure access for periodic maintenance or future re-construction. Future property owners may not be aware of a drainage

easement on their property if the easement is only on the record plan. However, by recording the drainage easement on the deed, the second owner, and any subsequent owner of the property, will be fully aware of the drainage easement on their property.

- **Results of Tax Ditch Right-of-Way Review.**

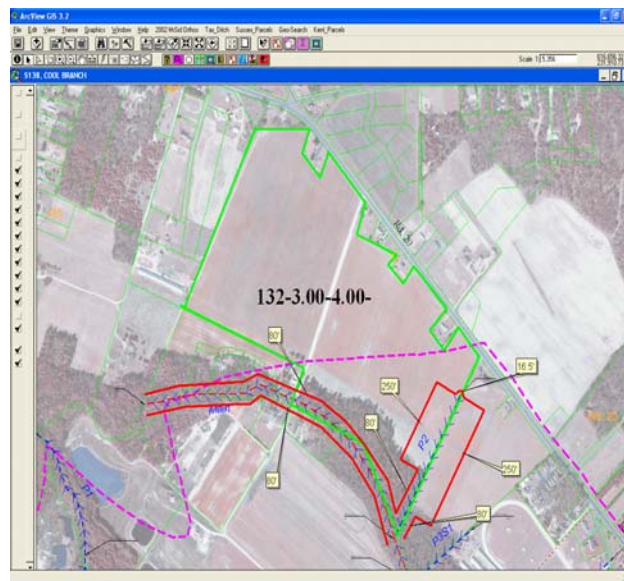
Parcel # 132-3.00-4.00 Inquiry #1002

Tax Ditch rights-of-way for the above parcel were researched. The information is as follows:

- This parcel is located in the Cool Branch Tax Ditch watershed and is affected by the following rights-of-way:

Cool Branch Tax Ditch	Left	Right
Main	80'	80'
Prong 2 *16.5' right-of-way around the top of the bank	80' 250'	80' 250'

- Please note that the above rights-of-way (R-O-W) are measured from the centerline of the ditch, with the exception of the upstream ends, which are measured from top of ditch bank. The designation of Left and Right side are based upon looking upstream.
- See following map.



Floodplains

A portion of the property is located in a Zone A floodplain. Sussex County's floodplain ordinance requires that a Base Flood Elevation be determined for any parcel that is located within a Zone A floodplain and is greater than 5 acres OR 50 lots.

Rare Species

DNREC has not surveyed the project area; therefore, it is unknown if there are State-rare or federally listed plants, animals or natural communities at this project site that would be affected by project activities. They do have records of numerous rare species downstream that could be impacted by run-off from this development if adequate buffers are not maintained along the perimeter of wetlands associated with Cool Branch.

Wildlife Habitat

DNREC appreciates the effort to maintain the existing woods along Cool Branch. This riparian forest not only provides a buffer for water quality but also provides a travel corridor and nesting and foraging areas for wildlife.

The applicant indicated on the PLUS application form (question #29) that there would not be disturbance within 100 feet of wetlands. It is not clear from the site plan, but a stormwater area and lot lines may be within 100 feet of wetlands. Lot lines should not be within this wetland buffer zone as future clearing by homeowners for sheds, play areas, dog kennels, swimming pools, etc., could occur and essentially decrease the width of this buffer zone. It is more effective to keep the buffer zone out of the lot lines than try and monitor and enforce any deed restrictions placed on home owners. Current State, County and local requirements do not appear to recognize scientific research which supports the need for 100-foot buffers to protect water quality.

Wetlands not only possess many functions and values for water quality but also provide habitat for an array of plant and animal species. Upland buffers around the wetlands are important for maintaining the function and integrity of the wetlands as well as providing critical habitat for wetland dependent species during a portion of their life cycle.

Underground Storage Tanks

There are two inactive LUST site(s) located near the proposed project:

Imperial Sales, Facility # 5-000562, Project # S9109193

Delux Dairy Seaford, Facility # 5-000175, Project # S9307140

No environmental impact is expected from the above inactive/active LUST site(s). However, should any underground storage tank or petroleum contaminated soil be discovered during construction, the Tank Management Branch must be notified as soon as possible. It is not anticipated that construction specifications would need to be changed due to petroleum contamination. However, should any unanticipated contamination be encountered and PVC pipe is being utilized, it will need to be changed to ductile steel with nitrile rubber gaskets in the contaminated areas.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 3.1 tons (6,139.6 pounds) per year of VOC (volatile organic compounds), 2.5 tons (5,083.2 pounds) per year of NOx (nitrogen oxides), 1.9 tons (3,750.4 pounds) per year of SO₂ (sulfur dioxide), 0.2 ton (333.9 pounds) per year of fine particulates and 256.8 tons (513,568.3 pounds) per year of CO₂ (carbon dioxide).

However, because this project is in a level 4 area, mobile emission calculations should be increased by 118 pounds for VOC emissions for each mile outside the designated growth areas per household unit; by 154 pounds for NOx; and by 2 pounds for particulate emissions. A typical development of 100 units that is planned 10 miles outside the growth areas will have additional 59 tons per year of VOC emissions, 77 tons per year of NOx emissions and 1 ton per year of particulate emissions versus the same development built in a growth area (level 1,2 or 3).

Emissions from area sources associated with this project are estimated to be 1.2 tons (2,476.4 pounds) per year of VOC (volatile organic compounds), 0.1 ton (272.5 pounds) per year of NOx (nitrogen oxides), 0.1 ton (226.1 pounds) per year of SO₂ (sulfur dioxide), 0.1 ton (291.8 pounds) per year of fine particulates and 5.0 tons (10,038.7 pounds) per year of CO₂ (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 0.5 tons (981.5 pounds) per year of NOx (nitrogen oxides), 1.7 tons (3,413.8 pounds) per year of SO₂ (sulfur dioxide) and 251.8 tons (503,529.6 pounds) per year of CO₂ (carbon dioxide).

	VOC	NOx	SO ₂	PM _{2.5}	CO ₂
Mobile	3.1	2.5	1.9	0.2	256.8
Residential	1.2	0.1	0.1	0.1	5.0

Electrical Power		0.5	1.7		251.8
TOTAL	4.3	3.1	3.7	0.3	513.6

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 0.5 tons of nitrogen oxides per year and 1.7 tons of sulfur dioxide per year.

A significant method to mitigate this impact would be to require the builder to construct Energy Star qualified homes. Every percentage of increased energy efficiency translates into a percent reduction in pollution. Quoting from their webpage, <http://www.energystar.gov/>:

“ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on heating, cooling, and hot water energy use and are typically achieved through a combination of:

building envelope upgrades,
high performance windows,
controlled air infiltration,
upgraded heating and air conditioning systems,
tight duct systems and
upgraded water-heating equipment.”

The DNREC Energy Office is in the process of training builders in making their structures more energy efficient. The Energy Star Program is excellent way to save on energy costs and reduce air pollution. They highly recommend this project development and other residential proposals increase the energy efficiency of their homes.

They also recommend that the home builders offer geothermal and photo voltaic energy options. Applicable vehicles should use retrofitted diesel engines during construction. The development should provide tie-ins to the nearest bike paths, links to mass transit, and fund a lawnmower exchange program for their new occupants.

State Fire Marshal's Office – Contact: Duane Fox 739-4394

This Agency has no objection to the re-zoning request. Preliminary meetings with Fire Protection Specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.statefiremarshal.delaware.gov, technical services link, plan review, applications or brochures.

At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation:

a. **Fire Protection Water Requirements:**

- Since the dwellings of the subdivision are proposed to be served by individual on-site wells (No Central or Public Water System within 1000' of property), set back and separation requirements will apply.

b. **Accessibility:**

- All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from the main thoroughfare must be constructed so fire department apparatus may negotiate it. If a "center island" is placed at an entrance into the subdivision, it shall be arranged in such a manner that it will not adversely affect quick and unimpeded travel of fire apparatus into the subdivision.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

c. Gas Piping and System Information:

- Provide type of fuel proposed, and show locations of bulk containers on plan.

d. Required Notes:

- Provide a note on the final plans submitted for review to read “ All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations”
- Proposed Use
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Provide Road Names, even for County Roads

These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal’s Office. At this time, this Agency has no objection to, and makes no comments regarding, the Comprehensive Plan or an amendment to a Comprehensive Plan.

Department of Agriculture - Contact: Scott Blaier 698-4500

The Department is opposed to development in areas designated as Investment Level 4 under the *Strategies for State Policies and Spending*. The *Strategies* do not support isolated development of these areas. The intent of this plan is to preserve the agricultural lands, forestlands, recreational uses, and open spaces that are preferred uses in Level 4 areas. The Department of Agriculture opposes development which conflicts with the preferred land uses, making it more difficult for agriculture and forestry to succeed, and increases the cost to the public for services and facilities.

More importantly, the Department of Agriculture opposes this project because it negatively impacts those land uses that are the backbone of Delaware’s resource industries - agriculture, forestry, horticulture - and the related industries they support. Often new residents of developments like this one, with little understanding or appreciation for modern agriculture and forestry, find their own lifestyles in direct conflict with the demands of these industries. Often these conflicts result in compromised health and safety; one example being decreased highway safety with farm equipment and cars competing on rural roads. The crucial economic, environmental and open space benefits of agriculture and forestry are compromised by such development. We oppose the creation of isolated development areas that are inefficient in terms of the full range of public facilities and services funded with public dollars. Public investments in areas such as this are best directed to agricultural and forestry preservation.

Section 1. Chapter 99, Code of Sussex Section 99-6 may apply to this subdivision. The applicant should verify the applicability of this provision with Sussex County. This Section of the Code states:

G. Agricultural Use Protections.

(1) Normal agricultural uses and activities conducted in a lawful manner are preferred. In order to establish and maintain a preference and priority for such normal agricultural uses and activities and avert and negate complaints arising from normal noise, dust, manure and other odors, the use of agricultural chemicals and nighttime farm operations, land uses adjacent to land used primarily for agricultural purposes shall be subject to the following restrictions:

(a) For any new subdivision development located in whole or in part within three hundred (300) feet of the boundary of land used primarily for agricultural purposes, the owner of the development shall provide in the deed restrictions and any leases or agreements of sale for any residential lot or dwelling unit the following notice:

“This property is located in the vicinity of land used primarily for agricultural purposes on which normal agricultural uses and activities have been afforded the highest priority use status. It can be anticipated that such agricultural uses and activities may now or in the future involve noise, dust, manure and other odors, the use of agricultural chemicals and nighttime farm operations. The use and enjoyment of this property is expressly conditioned on acceptance of any annoyance or inconvenience which may result from such normal agricultural uses and activities.”

(b) For any new subdivision development located in whole or in part within fifty (50) feet of the boundary of land used primarily for agricultural purposes no improvement requiring and occupancy approval for a residential type use shall be constructed within fifty (50) feet of the boundary of land used primarily for agricultural purposes.

The Department would also remind the developer to comply with the County’s forested buffer requirement. This buffer is essential for separating inherently disparate land uses (agriculture and residential) and mitigating the conflict that often arises as a result.

A large portion of this site has been designated as having “excellent” ground-water recharge potential. DNREC has mapped all ground-water recharge-potential recharge areas for the state, and an “excellent” rating designates an area as having important groundwater recharge qualities.

Senate Bill 119, enacted by the 141st General Assembly in June of 2001, requires the counties and municipalities with over 2,000 people to adopt as part of the update and implementation of their 2007 comprehensive land use plans, areas delineating excellent ground-water recharge potential areas. Furthermore, the counties and municipalities are required to adopt regulations by December 31, 2007 governing land uses within those areas to preserve ground-water quality and quantity.

Maintaining pervious cover in excellent and good recharge areas is crucial for the overall environmental health of our state and extremely important to efforts which ensure a safe drinking water supply for future generations. Retention of pervious cover to ensure an adequate future water supply is also important for the future viability of agriculture in the First State. The loss of every acre of land designated as “excellent” and “good” recharge areas adversely impacts the future prospects for agriculture in Delaware. The developer should make every effort to protect and maintain valuable ground-water recharge potential areas.

The Delaware Department of Agriculture supports growth which expands and builds on existing urban areas and growth zones in approved State, county and local plans. Where additional land preservation can occur through the use of transfer of development rights, and other land use measures, we will support these efforts and work with developers to implement these measures. If this project is approved we will work with the developers to minimize impacts to the agricultural and forestry industries.

Right Tree for the Right Place

The Delaware Department of Agriculture Forest Service encourages the developer to use the “Right Tree for the Right Place” for any design considerations. This concept allows for the proper placement of trees to increase property values in upwards of 25% of appraised value and will reduce heating and cooling costs on average by 20 to 35 dollars per month. In addition, a landscape design that encompasses this approach will avoid future maintenance cost to the property owner and ensure a lasting forest resource. To further support this concept the Delaware Forest Service does not recommend the planting of the following species due to the high risk of mortality from insects and disease:

Callery Pear

Ash Trees

Leyland Cypress

Red Oak (except for Willow Oak)

If you would like to learn more about the potential problems or impacts associated with these trees, please contact the Delaware Forest Service for more information at (302) 698-4500.

Native Landscapes

The Delaware Department of Agriculture and the Delaware Forest Service encourages the developer to use native trees and shrubs to buffer the property from the adjacent land-use activities near this site. A properly designed forested buffer can create wildlife habitat corridors and improve air quality to the area by removing six to eight tons of carbon dioxide annually and will clean our rivers and creeks of storm-water run-off pollutants. To learn more about acceptable native trees and how to avoid plants considered invasive to our local landscapes, please contact the Delaware Department of Agriculture Plant Industry Section at (302) 698-4500.

Public Service Commission - Contact: Andrea Maucher 739-4247

Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

Delaware State Housing Authority – Contact Vicki Powers 739-4263

This proposal is for a site plan review of 40 residential units on 41 acres located on the south side of DE Route 20, 1,850 feet east of SCR 483 near Seaford. According to the *State Strategies Map*, the proposal is located in an Investment Level 4 area. As a general planning practice, DSHA encourages residential development only in areas where residents will have proximity to services, markets, and employment opportunities, such as Investment Level 1 and 2 areas outlined in the State Strategies Map. Since the proposal is located in an area targeted for agricultural and natural resource protection, and therefore inconsistent with where the State would like to see new residential development, DSHA does not support this proposal.

Department of Education – Contact: John Marinucci 735-4055

This proposed development is in the Seaford School District. DOE recognizes that this development project is in level 4 of the State Strategies for Policies and Spending and as such, DOE does not support the approval of this project. DOE offers the following comments on behalf of the Seaford School District.

1. Using the DOE standard formula, this development will generate an estimated 20 students.
2. DOE records indicate that the Seaford School Districts' *elementary schools are not at or beyond 100% of current capacity* based on September 30, 2007 elementary enrollment.
3. DOE records indicate that the Seaford School Districts' *secondary schools are not at or beyond 100% of current capacity* based on September 30, 2007 secondary enrollment.
4. DOE requests the developer work with the Seaford School District transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the local school district.

Sussex County – Contact: Richard Kautz 855-7878

No comment on the downzoning from GR to AR-1. For future consideration concerning the subdivision, the preliminary subdivision plat should provide details of how the required forested buffer will be planted in relation to the maintenance area for the tax ditch.

The Sussex County Engineer Comments:

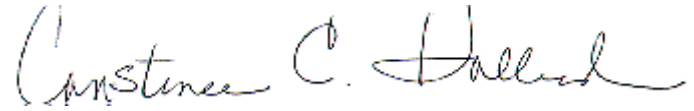
The project proposes to develop using individual onsite septic systems.

The proposed project is in the Secondary Service Area of the Blades Sanitary Sewer District, but is not in an area where Sussex County expects to provide sewer service in the foreseeable future. If Sussex County ever provides sewer service, homeowners are required to connect to the system at their expense. Sussex County has no objection to the project being served by individual on-site systems.

Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of State Planning Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.

Thank you for the opportunity to review this project. If you have any questions, please contact me at 302-739-3090.

Sincerely,

A handwritten signature in blue ink that reads "Constance C. Holland". The signature is written in a cursive style with a large initial 'C'.

Constance C. Holland, AICP
Director

CC: Sussex County



Deerfield Meadows

2008-02-06



- PLUS Projects
- NHDFlowLine
- All Roads
- Excellent Recharge Areas

This map was produced by the Delaware Department of Natural Resources and Environmental Control.

